Space Weather Forecast

Issued on Thursday, 24 February 2022 at 01:18 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Very slight chance of moderate solar activity.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been very low with no notable flare activity. There are three sunspot regions on the visible disc. A bipolar region in the northwest is fading with an alpha region in the northeast appearing stable. A further bipolar region in the northeast is more complex, but has not changed much in the last 24 hours. No Earth-directed CMEs were observed in the available imagery during the past 24 hours.

Solar Wind / Geomagnetic Activity: The solar wind has been variable over the last 24 hours, but continues to be elevated in the declining influence of a coronal hole fast wind. Total magnetic field strength has been weak, with the important north-south component also varying weakly. Resultant geomagnetic activity was Quiet (Kp 0-2).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) has returned to background levels.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is forecast to be low or very low, with a very slight chance of moderate-class flares.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast, although there is a very low risk that a CME could glance the Earth early on 24 February. Two fast solar winds are forecast to affect Earth on 25 and 27 February, with slightly elevated or elevated solar wind speeds. Geomagnetic activity is expected to be mainly Quiet but there's a very slight chance of Active or G1/Minor Storms due to any CME effects on day 1. Active intervals are possible due to the forecast high speed stream connections on day 2 and day 4.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain at background, with no solar radiation storms expected through the period.

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Met Office

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	10	1	1	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	10	10	10	10
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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